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The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board

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UNITED STATES PATENT AND TRADEMARK OFFICE

DIRECTOR OFFICE
TECHNOLOGY CENTER 2000

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GARY L. RUTLEDGE

Appeal No. 2003-0051
Application 09/259,000

ON BRIEF

MAILED

MAY 14 2004

U.S. PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Before THOMAS, KRASS, and GROSS, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellant has appealed to the Board from the examiner's final rejection of claims 1-9, 18, 19, and 23-33. Representative claim 1 is reproduced below:

1. A video inspection system comprising:

a first image sensor having a plurality of sensor elements, the first image sensor operable to acquire an image in a first direction along a first axis;

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a second image sensor having a plurality of sensor elements, the second image sensor operable to acquire an image in a second direction essentially perpendicular to the first direction; and

a camera board and processor coupled to the first image sensor and the second image sensor, the camera board and processor operable to receive an image from either the first image sensor or the second image sensor and prepare the image for display.

The following references are relied on by the examiner:

Federau	4,532,544	July 30, 1985
Berman et al. (Berman)	5,528,453	June 18, 1996
Barbour	5,652,617	July 29, 1997

Claims 1-9, 18, 19 and 23-33 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner relies upon Federau alone as to claims 1-4, 9, 18, 19 and 23-25, with the addition of Barbour and Berman as to claims 5-8 and 26-33.

Rather than repeat the positions of the appellant and the examiner, reference is made to the briefs and answer for the respective details thereof.

OPINION

We affirm-in-part the stated rejections of the claims on appeal.

We begin our consideration of independent claims 1 and 18 on appeal, both of which are rejected in the first stated rejection

on the basis of Federau alone. We have concluded that the examiner has failed to set forth a prima facie case of obviousness/anticipation of the independent claims 1 and 18 and thus their respectively dependent claims as well.

As to independent claim 1 on appeal, we do not agree with the examiner's reasoning as to this rejection set forth beginning at page 4 of the answer. On the one hand, the examiner asserts that both a first image sensor and a second image sensor are taught by this reference, then appears to retract this assertion by noting that although Federau teaches a plurality of sensor elements, this reference is silent as to the same being characterized as a first image sensor and a second image sensor. Essentially, the examiner has also over argued the teachings and suggestions of this reference and stretched it to the point of hindsight in the examiner's remaining reasoning.

Plainly, Figures 1-3 of Federau only show one line sensor 23, which has plural sensing areas 25/sensing elements 27. There is no second sensor operable to acquire an image in a second direction essentially perpendicular to the first direction taught or shown in Federau. The optical deflection prism 37 images the object space 13 along the interior space of the hollow body 3

through the optic imaging system 11 to the line sensor 23 which appears to be located horizontal to the surface of the hollow body 3. There is no separately discussed or depicted image or line sensor perpendicular to the imaging of the bore wall of the hollow body 3 along the panoramic axis 1/object axis 7, which is essentially perpendicular to its bore wall as discussed earlier. The structure in Federau's system does not meet or otherwise render obvious the subject matter of independent claim 1 on appeal and its respective dependent claims under this rejection.

Correspondingly, we also conclude that Federau does not teach or suggest within 35 U.S.C. § 103 the subject matter of independent claim 18 on appeal. The first clause in the body of this claim requires "a housing rotatable from a first direction along the long axis of an object being inspected to a second direction approximately perpendicular to the first direction." There is no movement of the type claimed of the camera housing 41 or any other shown elements in Figure 1 of Federau to correspond to this quoted limitation. There is no corresponding housing in Federau's Figure 1, for example, that itself rotates from a first direction to a second direction approximately perpendicular to the first direction, even though we recognize that the camera

head 41 moves along the panoramic axis 1/object axis 7 at the same time the camera head 41 rotates about this axis to image a scan line 31 on each of the respective sensor areas 25/27 of the line scanner or sensor 23. The actual claim language is not met.

We turn next to the rejection of claims 5-8 and 26-33 under 35 U.S.C. § 103 over Federau in view of Barbour, further in view of Berman. Appellant's arguments beginning at page 12 of the principal brief and page 3 of the reply brief do not argue against the combinability of these three references within 35 U.S.C. § 103 as reasoned by the examiner. Appellant only argues in effect that the result of the combination does not yield the claimed invention. We agree with this view expressed as to the subject matter of independent claim 33 as argued at pages 13 and 14 of the principal brief and therefore reverse the rejection of this independent claim, but disagree with appellant's views with respect to claim 29 expressed at pages 12 and 13 of this brief and at page 3 of the reply brief.

As to independent claim 33 the examiner only weakly argues that the combination meets the subject matter of this claim at page 7 of the answer. Likewise, the answer does not address at pages 9 and 10 appellant's remarks as to this claim at pages 13 and 14 of the principal brief. The examiner has not persuaded us

of the obviousness of the subject matter of the entire "a lower part" clause at the end of claim 33 on appeal and we can discern no teaching or suggestion among the three references which would have lead the artisan to conclude the obviousness of this subject matter. There is no teaching or suggestion among the references that the lower part or any part contains a pivoting means operable to pivot a lower part from a down view to a side view such that an image sensor within the camera assembly is able to acquire an image in a down position and a side position and any position in between, as claimed.

It appears to us that the subject matter of independent claim 29 would have been obvious to the artisan within 35 U.S.C. 103 over the teachings and suggestions of Barbour alone notwithstanding the additional teachings provided by Federau and Berman. Barbour is the prior art patent mentioned at page 2 of the specification as filed as part of the prior art. The initial lines of this claim are not argued by appellant and the claimed carrying case appears to be analogous to the entire van 2 in Figure 1 of this reference, which additionally shows a winch 4 corresponding to the spool and the discussion at column 8 indicates that coaxial cable is used to transport image information from the down hole image sensor to the video

recording element 16 among other elements within the van 2. There is shown a cable arm which is connected to the van by means of the cable.

The last clause of claim 29 recites "a camera assembly, coupled to the coaxial cable, having a single camera operable to capture an image in a first direction along a long axis of the object being inspected and capture an image in a second direction, the second direction ninety degrees offset from the first direction." It appears to us that either camera 200, 52 as part of the down hole video tool 8 in Figure 1 and depicted best in Figures 3 and 4 meets these limitations. The side scan mounted camera 200 clearly captures an image in its lateral direction as it descends along the long axis of the bore hole and also captures an image of any respective position in the bore hole as it moves up or down the hole, which position is ninety degrees from the lateral direction of the bore hole itself. It is emphasized that this camera captures both images during its movement along the axis. Correspondingly, the wide angle video camera 52 at the end of the structure 8 is shown in Figure 10 to capture not only certain side wall portions but as well the end view portions of the bore hole at any given location as well as it is descended or raised in the bore hole. Thus, this camera

captures two separate images during its descent essentially ninety degrees from each other because of its wide angle view. Contrary to the view taken at page 3 of the reply brief that Barbour does not teach a single camera operable to capture an image in a first and second direction, it appears to us that each of the cameras 52 and 200 in use perform the stated functions. Since no arguments are presented by appellant as to the subject matter of dependent claims 30-32, which depend on independent claim 29, the rejection of them is sustained as well.

Before we address the subject matter of dependent claims 5-8, which depend from independent claim 1, and are rejected as part of the second stated rejection, we introduce a new rejection of claims 1-9 on the basis of the combined teachings and suggestions of Barbour in view of Federau. From our earlier discussion with respect to the subject matter of independent claims 29 and 33, it is apparent to the reader that there are two image sensors as recited in claim 1 taught in Barbour in the form of the side scan mounted camera 200 and the wide angle video camera for the end view element, element 52 best shown in Figures 3 and 4 of Barbour.

The details of these cameras are not set forth in Barbour until the subject matter is discussed with respect to the

alternative embodiments in Figures 6 and 7 at column 13 of this reference with respect to the camera 200. The discussion beginning at line 35 indicates that the camera 200 may comprise its own circuit board on which is mounted a charge coupled device (CCD) for direct imaging. The artisan would well appreciate the nature of the line scan sensor 23 in Figures 1-3 of Federau would apparently comprise such a charge coupled device because it contains plural scanning areas 25/multiple sensor elements 27. Such CCD devices are known in the art to comprise a plurality of sensor elements to the extent that either sensor of claim 1 on appeal requires a plurality of such sensing elements. Moreover, the artisan would well appreciate within the teachings of Barbour alone that the other camera, the wide angle camera 52, would also comprise such a corresponding structural element and thus its own plurality of sensor elements as required by claim 1. The discussion at column 8 of Barbour indicates that there is a common camera board and processing element circuitry for each of the cameras such as being located in the upper section 30 and in the single video transmission amplifier board 40. The use of the lights associated with each camera may be such as to have either of them switched to an on or off position to therefore activate

either image sensor to display to the extent recited at the end of claim 1 on appeal.

As to the subject matter of dependent claim 2 it is apparent to the artisan that from the Figure 10 showing in Barbour the wide angle camera is capable of acquiring an image of 360 degrees around its longitudinal axis without rotation of any image sensor. The overall down hole video tool 8 in Figure 1 appears to meet the sealed camera assembly of claim 3. The teachings of Barbour indicate that it would have been usable with any type of device even a pipeline as in claim 4. It is well settled that the patentability of a structural element is not determined and based upon its use. The coaxial cable of Barbour meets the limitations of claim 5 and the elements within the van 2 in Figure 1 of this reference. The examiner's reasoning in the answer has made reference to the quick connect D connectors in meeting the features of dependent claim 6. The use of a spool in claim 7 is depicted as winch 4 in Figure 1 of Barbour. The examiner's rationale at page 7 of the answer as to claim 8 and his reliance upon Federau's Figure 1 and encoder 45 meets the feature of claim 8. Additionally, the teachings beginning at line 40 of column 9 of Barbour indicate that structure exists in this reference to monitor the depth at which the camera is

located. Finally, the subject matter of dependent claim 9 is met by the fact that the entire down hole video tool 8 of Barbour would rotate about the longitudinal axis and its own axis during a decent or withdrawal of the device from the bore hole. Therefore, it would rotate about this axis as the wide angle camera 52 descends or it retrieved.

In summary, we have reversed the examiner's rejection of claims 1-4, 9, 18, 19, and 23-25 under 35 U.S.C. § 103 as being obvious over Federau alone. According to the second stated rejection, we have sustained the rejection of claims 5-8 and 29-32. On the other hand, we have reversed the rejection of independent claim 33 and implicitly the rejection of dependent claims 26-28 since we have reversed the rejection of claim 18. Finally, we have instituted a new ground of rejection of claims 1-9 under 35 U.S.C. § 103 as being obvious over Barbour in view of Federau. Accordingly, the decision of the examiner is affirmed-in-part.

In addition to affirming the examiner's rejection of one or more claims, this decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b). 37 CFR § 1.196(b) provides, "A new ground of rejection shall not be considered final for purposes of judicial review."

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Regarding any affirmed rejection, 37 CFR § 1.197(b)
provides:

(b) Appellant may file a single request for rehearing
within two months from the date of the original
decision

37 CFR § 1.196(b) also provides that the appellant,
WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise
one of the following two options with respect to the new ground
of rejection to avoid termination of proceedings (37 CFR
§ 1.197(c)) as to the rejected claims:

(1) Submit an appropriate amendment of the claims
so rejected or a showing of facts relating to the
claims so rejected, or both, and have the matter
reconsidered by the examiner, in which event the
application will be remanded to the examiner. . . .

(2) Request that the application be reheard under
§ 1.197(b) by the Board of Patent Appeals and
Interferences upon the same record. . . .

Should the appellant elect to prosecute further before the
Primary Examiner pursuant to 37 CFR § 1.196(b)(1), in order to
preserve the right to seek review under 35 U.S.C. §§ 141 or 145
with respect to the affirmed rejection, the effective date of the
affirmance is deferred until conclusion of the prosecution before

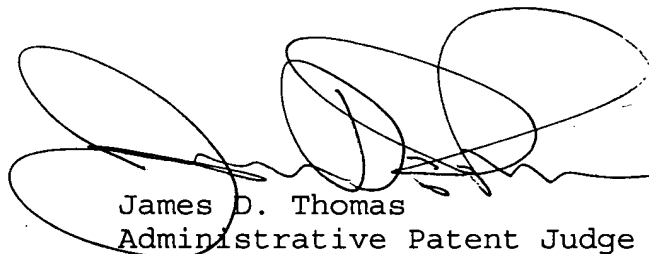
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the examiner unless, as a mere incident to the limited prosecution, the affirmed rejection is overcome.


If the appellant elects prosecution before the examiner and this does not result in allowance of the application, abandonment or a second appeal, this case should be returned to the Board of Patent Appeals and Interferences for final action on the affirmed rejection, including any timely request for rehearing thereof.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART
37 CFR § 1.196(b)


James D. Thomas)
Administrative Patent Judge)


Errol A. Krass)
Administrative Patent Judge)


Anita Pellman Gross)
Administrative Patent Judge)

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JDT/cam

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